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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,011

07/11/2005

Dominique Bras

Serie 5957

4858

7590

12/02/2008

Air Liquide
Intellectual Property Department
2700 Post Oak Blvd
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EXAMINER

WU, IVES J

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

12/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,011	Applicant(s) BRAS ET AL.	
	Examiner IVES WU	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-15 is/are allowed.
- 6) ☒ Claim(s) 16-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

(1). Applicants' Amendments and Remarks filed on 10/23/2008 have been received.

Claims 1-11 are cancelled before. Claims 12, 14-16, 21-22 are amended.

The 112 2nd rejections for claims 21-22 in prior Office Action dated 04/23/2008 is withdrawn in view of the current Amendments.

The rejection of claims 12-14 in prior Office Action dated 04/23/2008 is withdrawn in view of the current Remarks.

The indicated allowability of claims 16, 19-20 are withdrawn in view of the newly discovered reference(s) to Whitlock et al (US 4806171). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

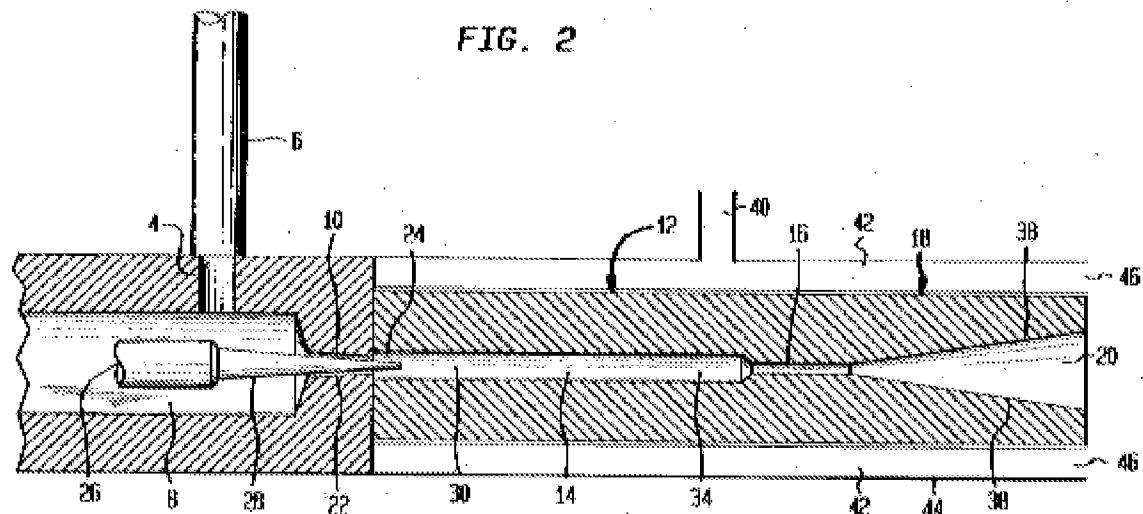
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(3). **Claim 16** is rejected under 35 U.S.C. 102(b) as being anticipated by Whitlock et al (US 4806171).

As to an apparatus comprising a) a variable flow expansion valve in **independent claim 16**, Whitlock et al (US 4806171) disclose apparatus and method for removing minute particles from a substrate (Title). As shown in the Figure below, it includes a variable expansion valve 28. The 1st orifice 10 may be equipped with a standard needle valve 26 having a tapered snout 28 which is movable within the 1st orifice 10 to control the flow of the fluid carbon dioxide (Col. 3, line 57-62).



As to an apparatus comprising b) an injector connected to a chamber, wherein chamber contains a gas stream in **independent claim 16**, Whitlock et al (US 4806171) disclose the apparatus in Figure above, the ejection spout 18 with wall 44, which reads on the injector as claimed. The gas stream in the chamber is considered as material to be worked upon.

As to an apparatus comprising c) a T-piece, wherein T-piece is connected to both the outlet of valve, and to injector in **independent claim 16**, Whitlock et al (US 4806171) disclose wall 44 and inlet 40, which form the T-piece and reads on the limitations of instant claim.

As to an apparatus comprising d) device adapted to supply valve with liquid carbon dioxide in **independent claim 16**, Whitlock et al (US 4806171) disclose liquid dioxide inlet 6 as shown in the Figure above.

As to an apparatus comprising e) a device for feeding T-piece with an inerting gas in **independent claim 16**, Whitlock et al (US 4806171) disclose nitrogen gas receiving port 40 as shown in the Figure above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(4). **Claims 19-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitlock et al (US 4806171).

As to injector being made of a thermally insulated material in **claim 19**, and thermally insulated material to be polysulfone in **claim 20**, it would be obvious to have polysulfone for the thermal insulation of injector because chosen known material for suitability render obvious. *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960).

Response to Arguments

Applicant's arguments, see Remarks, filed 10/23/2008, with respect to claim 12 have been fully considered and are persuasive. The rejection of 04/23/2008 has been withdrawn.

The status of instant claim 22 "Original" is incorrect because it is amended. Applicant is reminded to check the status more closely in any future amendments.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner: Ives Wu

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Date: November 26, 2008

/Duane S. Smith/

Supervisory Patent Examiner, Art Unit 1797